What is claimed is:

1.   A method of detecting a member of the taxa actinomycetes, comprising

   (a)   incubating a reagent that detects mycothiol or a precursor thereof with a sample for a time sufficient for said reagent to react with mycothiol or precursor thereof;

   (b)   detecting said reaction of said reagent with mycothiol or a precursor thereof,

wherein detection of a reaction is indicative of the presence of a member of the taxa actinomycetes.

2.   The method of claim 1, wherein said member of the taxa actinomyces is mycobacteria.

3.   The method of claim 1, wherein said sample is selected from the group consisting of a blood sample, a serum sample, a urine sample, a fecal sample, a tissue biopsy, cerebrospinal fluid sample, ascites sample, pleural fluid sample, respiratory secretions, and a sputum sample.

4.   The method of claim 1, wherein said reagent is an antibody.

5.   The method of claim 4, wherein said antibody is a monoclonal antibody.

6.   The method of claim 4, wherein said antibody is a polyclonal antibody.

7.   The method of claim 1, further comprising

   (c)   quantitating mycothiol or precursor thereof.

8.   The method of claim 1, wherein said precursor of mycothiol is selected from the group consisting of 1-D-*myo*-inosityl-2-amino-2-deoxy-α-D-glucopyranoside and 1-D-*myo*-inosityl-2-(L-cystinyl) amido-2-deoxy-α-D-glucopyranoside.

9.   An antibody which binds to mycothiol or a mycothiol precursor.

10.   The antibody of claim 9, wherein the antibody is monoclonal.

11.   The antibody of claim 9, wherein the antibody is polyclonal.

12.   A method for diagnosis of a subject having or at risk of having an actinomycetes-associated disorder, comprising the steps of :

    (a)   contacting a sample from the subject having or at risk of having an actinomycetes-associated disorder with a reagent that detects mycothiol or precursor thereof for a period of time sufficient for said reagent to react with mycothiol or precursor thereof;

    (b)   detecting the reaction of said reagent that detects mycothiol or precursor thereof with mycothiol or precursor thereof; and

    (c)   comparing the reaction of the reagent that detects mycothiol or precursor thereof to said sample to a control sample.

13.   The method of claim 12, wherein said actinomycetes is mycobacteria.

14.   The method of claim 12, wherein said sample is selected from the group consisting of a blood sample, a serum sample, a urine sample, a fecal sample, a cerebrospinal fluid sample, an ascites sample, a pleural fluid sample, a tissue biopsy, respiratory secretions and a sputum sample.

15.   The method of claim 12, wherein said reagent is an antibody.

16.   The method of claim 15, wherein said antibody is a monoclonal antibody.

17.   The method of claim 15, wherein said antibody is a polyclonal antibody.

18. A method for identifying a sample with altered production of mycothiol or a precursor thereof, comprising:

    (a)   contacting a test sample with a reagent that detects mycothiol or precursor thereof for a period of time sufficient for said reagent to react with mycothiol or precursor thereof;

    (b)   detecting the reaction of said reagent that detects mycothiol or precursor thereof with mycothiol or precursor thereof; and

    (c)   comparing the reaction of the reagent that detects mycothiol or precursor thereof to said test sample with a control sample, wherein a difference in the amount of reaction with the test sample as compared to the control sample is indicative of an alteration in the production of mycothiol or precursor thereof.

19. The method of claim 18, wherein the sample is a strain of taxa actinomycetes.

20. The method of claim 19, wherein the sample is a strain of mycobacteria.

21. The method of claim 18, wherein said altered production is decreased production.

22. The method of claim 18, wherein said altered production in increased production.

23. The method of claim 18, wherein said precursor of mycothiol is 1-D-*myo*-inosityl-2-amino-2-deoxy-α-D-glucopyranoside.

24. The method of claim 18, wherein said precursor of mycothiol is 1-D-*myo*-inosityl-2-(L-cysteinyl)amido-2-deoxy-α-D-glucopyranoside.

25. The method of claim 18, wherein said reagent is an antibody.

26. The method of claim 25, wherein said antibody is a monoclonal antibody.

27.　The method of claim 25, wherein said antibody is a polyclonal antibody.

28.　A method for detecting mycothiol or precursor thereof in a bacterial colony, comprising:

(a)　contacting a membrane to a bacteria plated on a bacterial culture plate for a time sufficient to allow said bacteria to adhere to said membrane,

(b)　lysing said bacteria adhered to said membrane,

(c)　contacting said membrane with a reagent to detect mycothiol or precursor thereof,

(d)　detecting said reagent.

29.　The method of claim 28, wherein said bacteria is actinomycetes.

30.　The method of claim 29, wherein said actinomycetes is mycobacteria.

31.　The method of claim 28, wherein said reagent is an antibody.

32.　The method of claim 31, wherein said antibody is a monoclonal antibody.

33.　The method of claim 31, wherein said antibody is a polyclonal antibody.

34.　The method of claim 28, wherein said precursor of mycothiol is selected from the group consisting of 1-D-*myo*-inosityl-2-amino-2-deoxy-α-D-glucopyranoside and 1-D-*myo*-inosityl-2-(L-cysteinyl)amido-2-deoxy-α-D-glucopyranoside.

35. A method for detecting mycothiol or precursor thereof, comprising:

    (a)   biotinylating mycothiol or precursor thereof to form biotinylated mycothiol or biotinylated mycothiol precursor,

    (b)   contacting said biotinylated mycothiol or biotinylated mycothiol precursor to an antibody with binds mycothiol or precursor thereof to form a complex,

    (c)   detecting the presence of said complex with a detection reagent.

36. The method of claim 35, wherein said detection reagent is selected from the group consisting of an avidinated reagent and a secondary antibody which binds to said antibody which binds mycothiol or precursor thereof.

37. The method of claim 36, wherein said detection reagent is directly labeled.

38. The method of claim 36, wherein said label is selected from a fluorophore, a chromophore, a luminophore, a ferritin, a heavy metal and a radioactive label.

39. The method of claim 38, wherein said enzymatic label is selected from the group consisting of horseradish peroxidase, urease, luciferase and alkaline phosphatase.

40. A kit useful for detecting the presence of mycothiol or precursor thereof in a sample, the kit comprising carrier means being compartmentalized to receive in close confinement therein one or more containers comprising a container containing a reagent to detect mycothiol or precursor thereof.

41. The kit of claim 40, wherein said reagent is an antibody which binds mycothiol or precursor thereof.

42. The kit of claim 40, further comprising a container containing a detection reagent to detect the reaction of mycothiol or precursor thereof with said reagent to detect mycothiol or precursor thereof.

43. A method for detecting a mycothiol or a precursor thereof, comprising;

partially purifying mycothiol or said precursor thereof;

reacting said precusor of myocthiol with a reagent for fluroescent thiol or amine labeling to form a reaction product; and

detecting the presence of said reaction product.

44. The method of claim 43, wherein said reagent for fluorescent thiol or amine labeling is selected form the group consisting of 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate and 4-bromomethyl-3,6,7-trimethyl-1,5-diazabicyclo[3.3.0]octa-3,6-diene-2,8-dione.

45. The method of claim 43, wherein said amine labeling occurs at a pH of from about 8.0 to 8.6.